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The Tropospheric Ozone Assessment Report: Trends in ozone and ozone metrics relevant for human health

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Ozone is an air pollutant formed in the atmosphere from precursor species (NO_x , VOCs, CH_4 , CO) that is detrimental to human health and ecosystems. The global Tropospheric Ozone Assessment Report (TOAR) initiative was recently initiated by the International Global Atmospheric Chemistry Project (IGAC) with the mission to provide the research community with an up-to-date scientific assessment of tropospheric ozone's global distribution and trends from the surface to the tropopause. TOAR has assembled the world's largest database of surface ozone observations and is generating ozone exposure and dose metrics at thousands of measurement sites around the world. This talk will present results from the assessment focused on those indicators most relevant to human health.

An overview of trends in ozone concentrations across the globe, with an emphasis on urban areas because of their high population density and thereby relevance for human health, will be shown. Trends in different world regions will be compared, as well as differences within regions. Additionally, there are a variety of existing metrics aimed at assessing ozone concentrations and the protection of human health in use worldwide. The message communicated can be very different depending on metric used and whether this is focused on peak ozone concentrations or longer-term average concentrations. A selection of these metrics has been made to represent different conditions and applied to the ozone data gathered in the TOAR effort. The sensitivity of the trends to the selection of metric will be discussed.